

REMARKS/ARGUMENTS

Claims 10-20 remain in this application. Claim 11 has been amended to correct a transcription error, and new claim 20, directed to a particular embodiment of the present invention, has been added. Claims 1-9 are being canceled in response to a restriction requirement in this case, such cancellation, however, being without prejudice to Applicants' right to present those claims in one or more continuing applications. Finally, the specification and drawings are being corrected in response to problems pointed out by the Examiner. Reconsideration of this application in view of these amendments and the following remarks is respectfully requested.

Concerning the drawings, the Examiner objected to Fig. 1 on the ground of a numbering discrepancy with the drawing description in the specification. In response to that rejection, a new sheet of drawings with figures renumbered as the Examiner has proposed is being provided. Reconsideration of the objection to the drawings in light of the revised drawing sheet is respectfully requested.

The Examiner next rejected claims 11, 15 and 16 of the application under 35 U.S.C. § 112, second paragraph. In response to that rejection, claim 11 has been amended for the purpose of clarification, and the substance of claims 15 and 16 is being added to the description at page 6 of the specification. Reconsideration and withdrawal of the rejection of claims 11, 15 and 16 in light of these amendments are respectfully requested.

The Examiner next rejected claims 10-14 and 17-19 of the application under 35 U.S.C. § 102 as fully met by U.S. Patent No. 4,859,642 to Hoelderich et al. (Hoelderich). That rejection is respectfully traversed for the following reasons.

Hoelderich teaches the use of static mixing elements in a honeycomb reactor to control heat flow in strongly endothermic or exothermic reactions. The honeycomb geometry is not critical to the invention; Hoelderich teaches that honeycomb elements of any outer shape, including circular, and any channel shape, including circular, can be used (column 2, lines 15-25 of the patent). Likewise, Hoelderich indicates that the physical state of the reactant feedstream is unimportant; both gas and liquid feedstreams can be processed in such reactions (column 1, lines 20-36 of the patent).

In essence, then, Hoelderich merely provides a laundry list of the various possibilities for using honeycomb reactors. Clearly this is not a disclosure that can obviate all possible processes employing such reactors. In fact, with the exception of his examples, Hoelderich provides no guidance whatever concerning which of the various catalyst shapes, and which of the various physical feedstream states, should be used for any particular process. It therefore remains to the artisan to determine whether, and if so which, of the various processing possibilities might provide enhanced results not previously known to the art.

The only specific disclosure of Hoelderich is found in the examples disclosed at columns 2-4 of the patent. The honeycombs actually employed by Hoelderich in those examples are of square channel shape (column 2, line 68 of the patent). Further the particular reaction described, i.e. the dehydrocyanization of formylalanine nitrile in a pyrolysis tube at a temperature of 460°C and a pressure of 30 mbar, appears to be a vapor phase process, since the feedstream is processed through a thin-film evaporator prior to conveyance through the reactor tube (column 3, lines 12-24 of the patent).

In summary, it is clear that Hoelderich neither expressly nor inherently discloses the Applicants' liquid/catalyst or gas/liquid/catalyst processes. Nor is there even a remote suggestion that unexpectedly high conversion rates may be obtained in processes involving liquid phase treatments if monolithic catalysts of rounded rather than sharply angled channel shapes are used. Yet that is the crux of the Applicants' invention: unexpectedly but

consistently higher reaction efficiencies attend the use of rounded rather than square-channeled structured catalysts in liquid phase reactions carried out above certain liquid flow rates (Figs. 3-8 of the drawings).

For the above reasons, the Applicants respectfully submit that the invention of claims 10-20 of this application is not in fact anticipated by Hoelderich, and therefore that reconsideration and withdrawal of the rejection of claims 10-19 are appropriate under the circumstances.

The Examiner next rejected claims 10-12 and 18 of the application under 35 U.S.C. §102 as being anticipated by Dettling et al. U.S. Patent No. 4,335,043 (Dettling). This rejection is respectfully traversed for the following reasons.

To briefly review the reference, Dettling broadly teaches monolithic catalyst support members incorporating channel cross-sections with rounded corners, and methods for using them. The advantage of these structures is that they maybe be coated with catalyst materials without leaving unwanted and uneconomic accumulations of catalyst in inaccessible corner locations within the monolith channels (column 3, lines 6-17 of the patent).

The Dettling structures are designed and intended for use as catalyst supports for gas treatment processes, particularly processes involving the treatment of automotive exhaust gases (column 1, lines 6-20 of the patent). Thus while Dettling indicates general utility for the treatment of gases (or liquids), there is no disclosure of any actual liquid treating process, either inherent or express. Nor is there any inherent teaching or suggestion that improvements in conversion efficiency can be provided in liquid treatment processes through the use of rounded channel monolithic catalysts. Hence, as in Hoelderich, the artisan could select a catalyst from Dettling and a liquid treatment process from elsewhere in the prior art to arrive at the Applicants' process, but without basis for a reasonable expectation of success in the realization of improved results stemming from that process.

In summary, the Applicants respectfully submit that Dettling is insufficient to anticipate a liquid treatment process in accordance with the rejected claims, and therefore that reconsideration and withdrawal of the rejection of claims 10-12 and 18 of the present application under 35 U.S.C. §102 should be withdrawn.

Finally, the Examiner has rejected claims 15 and 16 of the application as unpatentable over Hoelderich under 35 U.S.C. §103. That rejection is also respectfully traversed for the following reasons.

The Examiner first equates the "fluid" flow rate of 30l/hr disclosed in Hoelderich to a liquid linear velocity within the Applicants' claimed range. However, it is plain from the Hoelderich disclosure that the velocity disclosed is a gas flow rate (air). No technical basis for finding that the disclosed gas flow rate equates to a linear liquid flow velocity is given, nor can any be imagined. The two flow conditions are not even remotely analogous and neither suggests the other.

Further, the Examiner suggests that varying the liquid flow rates and gas:liquid feedstream volumes taught by Hoelderich to arrive at the Applicants' process conditions would involve mere routine optimization. This conclusion is not well-supported by the present record for at least two reasons. First, Hoelderich does not disclose any liquid linear flow velocity at all, and in fact appears to process a vapor stream rather than a gas/liquid stream. Accordingly, more than optimization of the Hoelderich process would be required to arrive at the Applicants' process. Secondly, the Applicants' result of a large, consistent and unexpected increase in process efficiencies is not derived from a selection of flow rates alone, but also requires the selection of a monolithic catalyst of a particular geometry over monolithic catalysts of other, more conventional geometries. No optimization of the Hoelderich flow conditions alone would produce such a result.

Appl. No.: 10/008,059
Amdt. Dated: 11/13/01
Reply to Office Action of: 07/18/2003

For the above reasons, the Applicants respectfully submit that the subject matter of claims 15 and 16 of the application could not in fact be derived by any obvious modification of the Hoelderich patent, and therefore that the 103 rejection of claims 15 and 16 on reference to that patent should be withdrawn.

In light of the foregoing amendments and remarks, the Applicants respectfully submit that the remaining claims of this application are now in condition for allowance. Accordingly favorable reconsideration of this application and the issuance of a Notice of Allowance herein are courteously solicited.

Applicants believe that only a one-month extension of time is necessary to make this Reply timely, but contingently request that the Office grant such additional time extension pursuant to 37 C.F.R. § 1.136(a) as may be necessary to make this Reply timely, if in fact such an additional extension is required. In that contingency the Office is hereby authorized to charge any additional extension fees or surcharges to the deposit account of Corning Incorporated, Deposit Account 03-3325.

Respectfully submitted,



DATE: October 24, 2003

Kees van der Sterre
Attorney for Assignee
Reg. No. 25,938
Corning Incorporated
SP-TI-03-1
Corning, NY 14831
Phone: (607) 974-3294

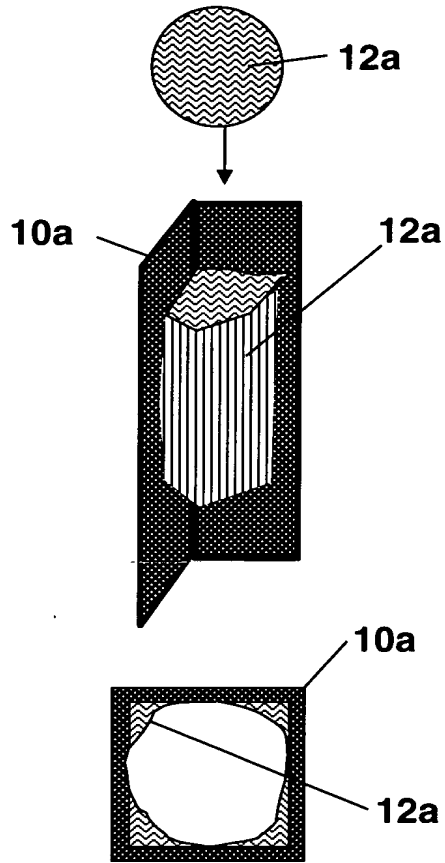


Fig. 1a (Prior Art)

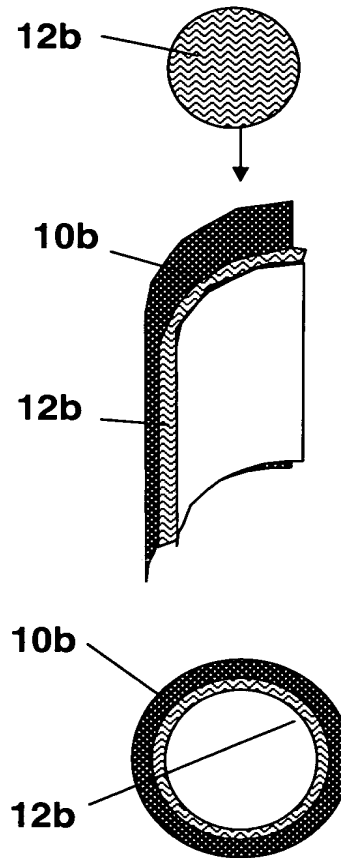


Fig. 1b

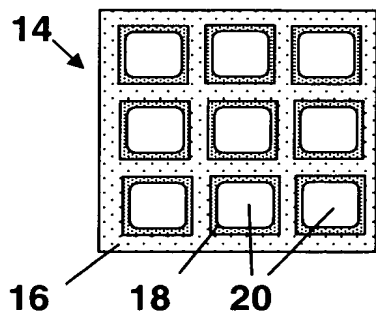


Fig. 2a

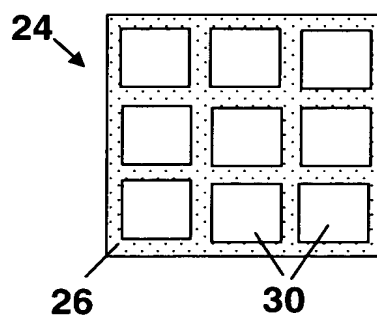


Fig. 2b

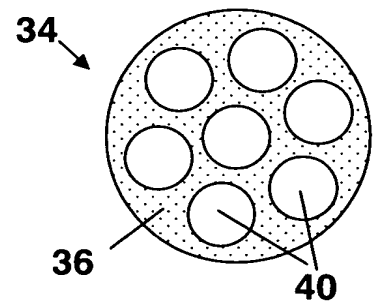


Fig. 2c